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The Influence of System Quality on User Satisfaction of the Regional Government E-Procurement System

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Abstract: Digital transformation in public procurement has expanded the use of electronic procurement systems to improve transparency, accountability, and efficiency. However, empirical evidence on how system quality shapes user satisfaction in Indonesian local governments remains limited, particularly across multiple regions. This study examines the influence of system quality on user satisfaction using a sequential explanatory mixed-methods design. Quantitative data were collected from 300 local government officials selected through purposive sampling and analyzed using Partial Least Squares Structural Equation Modeling, followed by qualitative interviews to explain the statistical findings. System quality was assessed through ease of use, reliability, response time, security, flexibility, integration, and accessibility. The results show that system quality has a positive and significant effect on user satisfaction ($\beta = 0.723$; $t = 18.534$; $p < 0.001$), explaining 52.3% of its variance. Qualitative findings reinforce the importance of reliability, usability, speed, security, and integration. The study extends the DeLone and McLean Information Systems Success Model to multi-regional local government e-procurement and provides practical priorities for improving public digital procurement services.

Keywords: System Quality, User Satisfaction, E-Procurement, Local Government, Information Systems Success

INTRODUCTION

Digital transformation in the public sector has become a strategic agenda for achieving transparent, accountable, effective, and efficient governance. One important implementation is electronic procurement (e-procurement), which replaces conventional procurement mechanisms that have been vulnerable to inefficiency, process delays, low transparency, and administrative irregularities. In Indonesia, e-procurement is implemented through the Electronic Procurement System and is managed nationally by the Government Goods/Services Procurement Policy Agency. The system is expected to improve public service quality, accelerate procurement, expand healthy business competition, and strengthen accountability in state financial management.

The success of e-procurement is determined not only by technological infrastructure but also by the acceptance and satisfaction of its users. Government officials interact directly with the system throughout the procurement process, so their experience is central to implementation effectiveness. User satisfaction is a major indicator of information system success because satisfied users tend to use a system more optimally, demonstrate stronger commitment to technology use, and support the sustainability of digital implementation. Conversely, low satisfaction can reduce usage intensity, increase resistance to change, and hinder organizational digitalization goals.

System quality is one of the factors most consistently associated with user satisfaction. It reflects the technical characteristics of an information system, including ease of use, reliability, security, flexibility, response time, integration, and accessibility. A high-quality system helps users complete tasks more quickly, accurately, and efficiently, whereas disruptions, slow access, complex interfaces, or weak integration can reduce satisfaction and hinder implementation effectiveness. In local government e-procurement, system quality also concerns stability under simultaneous use, compatibility with other government applications, transaction security, and ease of navigation.

The relationship between system quality and user satisfaction is explained by the DeLone and McLean Information Systems Success Model. The model positions system quality, information quality, and service quality as important determinants of system use and user satisfaction, which subsequently contribute to individual and organizational net benefits (DeLone & McLean, 2003). Prior research has validated the importance of system quality in e-government and other digital service settings (Wang & Liao, 2008; Petter et al., 2008). The model therefore provides the primary theoretical foundation for examining the success of local government e-procurement.

Despite extensive information systems research, empirical evidence on local government e-procurement in Indonesia remains relatively limited. Previous studies have often focused on technology adoption, behavioral intention, user acceptance, or general e-government effectiveness rather than user satisfaction as a central indicator of e-procurement success. Many studies have also been conducted in a single organization or region, which limits generalization across local governments that differ in human resource capacity, digital maturity, information technology infrastructure, and organizational governance. In addition, quantitative studies may identify statistical relationships without fully explaining users' experiences and contextual obstacles.

Practical challenges reinforce the need for this analysis. E-procurement implementation may still encounter system disruptions during tender processes, slow response during peak use, difficulties integrating with other government systems, limited features, and accessibility constraints in regions with weaker information technology infrastructure. Users also vary in digital literacy, experience, and technological capability. When a system is perceived as complex, unresponsive, or poorly aligned with operational needs, procurement officers may experience greater workload and lower satisfaction.

This study addresses these gaps through a multi-regional sequential explanatory mixed-methods approach. Its novelty lies in re-examining the DeLone and McLean Information Systems Success Model in the context of Indonesian local government e-procurement, combining quantitative causal testing with qualitative exploration, and using a research scope that covers local governments from multiple regions. The study also aims to produce practical recommendations on the dimensions of system quality that should be improved to increase user satisfaction and support more transparent, accountable, and service-oriented procurement governance.

Based on the research gap and objectives described above, this study addresses the following research questions:

1. How do local government officials perceive the quality of the e-procurement system?
2. What is the level of user satisfaction with the e-procurement system in local governments in Indonesia?
3. To what extent does system quality affect user satisfaction of e-procurement systems?
4. How do qualitative findings explain the relationship between system quality and user satisfaction and identify factors that support or hinder user satisfaction?

METHOD

This study uses a sequential explanatory mixed-methods design. The first stage tests the effect of system quality on user satisfaction using quantitative data, and the second stage uses qualitative data to explain the statistical results, user experiences, and contextual factors. The research was conducted in local governments in Indonesia using a multi-regional approach involving provinces from western, central, and eastern Indonesia. The unit of analysis is government officials who use the e-procurement system in the procurement of goods and services.

The quantitative population comprises local government officials involved in electronic procurement. Purposive sampling was used to select respondents with relevant experience. The criteria included at least one year of experience using the e-procurement system, direct involvement in electronic procurement as a procurement official, working group member, commitment-making official, technical activity implementing official, or another authorized party, and willingness to participate voluntarily. Based on these criteria, the study used 300 respondents from regional government agencies and other government institutions that had implemented e-procurement.

System quality is defined as the ability of the local government e-procurement system to provide services that are easy to use, reliable, fast, secure, flexible, integrated, and accessible. Its indicators include ease of use, system reliability, response time, security, flexibility, system integration, and ease of access or navigation. User satisfaction is the user's evaluation of the extent to which the system meets expectations and supports work. It is measured through satisfaction with ease of use, system performance, effectiveness in supporting work, efficiency of work processes, and overall satisfaction.

Primary quantitative data were collected using a structured questionnaire with a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was developed from the DeLone and McLean Information Systems Success Model and was subjected to content validity, a pilot test, construct validity testing, and reliability testing. Qualitative data were obtained through semi-structured interviews, observation of system use, and documentation review, including relevant guidelines, standard operating procedures, and e-procurement implementation reports.

Quantitative data were analyzed using Partial Least Squares Structural Equation Modeling with SmartPLS 4. The analysis included descriptive respondent analysis, assessment of common method bias through full collinearity, convergent validity using outer loadings and Average Variance Extracted, discriminant validity using the Heterotrait-Monotrait Ratio and Fornell-Larcker criteria, and construct reliability using Cronbach's Alpha and Composite Reliability. The structural model was then evaluated through path coefficients, collinearity, coefficient of determination, effect size, predictive relevance, and bootstrapping. A relationship was considered statistically significant at $p < 0.05$ or $t > 1.96$ (Hair et al., 2022; Henseler et al., 2015; Sarstedt et al., 2020).

Qualitative data were analyzed thematically. Interview recordings were transcribed, the full data were read repeatedly for familiarization, and open, axial, and selective coding were used to develop categories and themes. The analysis then interpreted the emerging themes by relating them to theory, previous findings, and the context of local government e-procurement.

Credibility was strengthened through source triangulation, method triangulation, member checking, and peer debriefing. Quantitative and qualitative findings were integrated through a joint display logic in which statistical results were compared with interview evidence to obtain a more comprehensive explanation of system quality and user satisfaction.

RESULTS AND DISCUSSION

Results

The quantitative analysis shows that System Quality has a positive and statistically significant effect on User Satisfaction ($\beta = 0.723$; $t = 18.534$; $p < 0.001$), supporting the proposed hypothesis. The coefficient of determination (R^2) is 0.523, indicating that System Quality explains approximately 52.3% of the variance in User Satisfaction. The result demonstrates a moderate to substantial explanatory power and confirms the central role of system quality in determining users' satisfaction with regional government e-procurement.

The measurement model demonstrates satisfactory psychometric properties. All indicators achieved outer loading values above 0.70, while Average Variance Extracted, Composite Reliability, and Cronbach's Alpha exceeded their minimum acceptable thresholds. Discriminant validity was also established using the Heterotrait-Monotrait Ratio. These results indicate that the measurement instrument is valid and reliable for assessing system quality and user satisfaction in the public-sector e-procurement context.

The qualitative findings complement the quantitative results. Informants consistently identified system reliability, ease of use, response speed, security, and system integration as the most important dimensions shaping their experience. A stable system with intuitive navigation and rapid processing was associated with smoother procurement activities and lower administrative burden. Conversely, system downtime, slow response during peak periods, and technical errors were frequently identified as barriers that reduced user satisfaction.

The integrated findings therefore confirm the applicability of the DeLone and McLean Information Systems Success Model to Indonesian local government e-procurement. Improvements in system quality affect not only technical performance but also users' confidence, operational efficiency, and overall satisfaction with digital procurement services.

Discussion

The positive relationship between system quality and user satisfaction indicates that local government employees perceive the e-procurement system more favorably when it is reliable, easy to use, secure, responsive, flexible, and integrated. Efficient system operation enables procurement officers to complete tasks more accurately, reduce processing time, and experience fewer operational difficulties. This finding is consistent with the DeLone and McLean model, which positions system quality as a primary determinant of user satisfaction (DeLone & McLean, 2003), and with evidence from e-government research showing that stable and usable systems improve user evaluations (Wang & Liao, 2008).

System reliability emerged as a particularly important dimension. Procurement activities depend heavily on system availability, and technical failures can delay procurement schedules, increase administrative workload, and affect organizational performance. The qualitative evidence explains why the system quality construct had a strong statistical effect: users directly experience the consequences of downtime, failed transactions, and unstable services during time-sensitive procurement activities.

Usability also plays a substantial role in satisfaction. Respondents indicated that an intuitive interface reduces the learning curve for both new and experienced procurement officers. Clear navigation, understandable instructions, and simplified procedures allow users to work more efficiently. These characteristics reduce cognitive effort and support positive

evaluations of system performance, which is consistent with the logic of information systems success.

Security is another critical component because government procurement involves confidential documents, electronic contracts, and financial information. Users expect strong authentication, secure data storage, and protection against unauthorized access. When these protections are perceived as dependable, users develop greater confidence in the platform. In addition, response time is important because procurement frequently involves multiple stakeholders working within limited schedules; rapid responses reduce waiting time and support faster decision-making.

From a theoretical perspective, the study extends the application of the DeLone and McLean Information Systems Success Model to local government e-procurement in Indonesia. Much prior work has examined e-government, e-commerce, online banking, and e-learning, whereas evidence on local government e-procurement remains more limited. The multi-regional mixed-methods design adds contextual explanation to the statistical relationship and shows how technical system characteristics are experienced by procurement users.

From a managerial perspective, system quality should be treated as a strategic organizational priority rather than merely a technical issue. Local governments and system developers should improve infrastructure and server capacity, strengthen cybersecurity, simplify user interfaces, enhance interoperability with financial, budgeting, planning, and performance systems, and provide continuous technical support. The novelty of this study is the integrated evidence that system quality improves user satisfaction through a set of interrelated operational dimensions within a multi-regional public procurement context.

CONCLUSION

Conclusion

This study concludes that system quality is a significant determinant of user satisfaction in regional government e-procurement systems in Indonesia. The statistical result ($\beta = 0.723$; $t = 18.534$; $p < 0.001$) and R^2 of 0.523 demonstrate that better system quality is associated with substantially higher user satisfaction. The qualitative findings explain this relationship by showing that reliability, ease of use, response speed, security, and integration shape users' day-to-day procurement experience. The study therefore supports the relevance of the DeLone and McLean Information Systems Success Model in local government e-procurement and shows that system quality improvements can contribute to more efficient, dependable, and satisfactory digital procurement services.

Limitations

The study focuses primarily on the relationship between system quality and user satisfaction and uses purposive sampling of 300 e-procurement users. Although the multi-regional design broadens the research scope, other constructs in the DeLone and McLean model and other contextual factors may also influence satisfaction. The findings should therefore be interpreted within the variables, respondent criteria, and government e-procurement context examined in this study.

Recommendations

Local governments should continuously improve system reliability by strengthening server capacity, network infrastructure, and proactive maintenance, particularly during peak tender periods. System developers should simplify navigation and reduce unnecessary procedural complexity through a user-centered interface. Cybersecurity should be strengthened through robust authentication, encryption, regular vulnerability assessment, and continuous monitoring. Greater interoperability is also needed between e-procurement and government

financial management, budgeting, planning, and performance applications to reduce duplicate data entry and improve consistency. Continuous training, updated user guidance, online learning support, and responsive helpdesk services should be provided to strengthen users' digital competencies. Future research should incorporate additional constructs such as Information Quality, Service Quality, Trust, User Experience, and Net Benefits and may use longitudinal or comparative designs across different levels of government.

REFERENCES

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. Journal of Management Information Systems, 19(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Dwivedi, Y. K., Hughes, L., Rana, N. P., Slade, E. L., & Williams, M. D. (2019). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research. International Journal of Information Management, 57, 101994.

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Sage Publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115–135.https://doi.org/10.1007/s11747-014-0403-8

International Organization for Standardization. (2023). ISO/IEC 25010: Systems and software engineering—Systems and software Quality Requirements and Evaluation (SQuaRE)—System and software quality models.

International Sustainability Standards Board. (2023). IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information. IFRS Foundation

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. Academy of Management Review, 20(3), 709–734.https://doi.org/10.2307/258792

McKnight, D.H., Carter, M., Thatcher, J.B., & Clay, P.F. (2011). Trust in a specific technology: An investigation of its components and measures. ACM Transactions on Management Information Systems, 2(2), 1–25.https://doi.org/10.1145/1985347.1985353

Petter, S., DeLone, W., & McLean, E. (2008). Measuring information systems success: Models, dimensions, measures, and interrelationships. European Journal of Information Systems, 17(3), 236–263.

Ringle, C. M., Wende, S., & Becker, J.-M. (2024). SmartPLS 4. SmartPLS GmbH.

Sarstedt, M., Ringle, C. M., Cheah, J.-H., Ting, H., Moisescu, O. I., & Radomir, L. (2020). Structural model robustness checks in PLS-SEM. Tourism Economics, 26(4), 531–554.

Seddon, P.B. (1997). A respecification and extension of the DeLone and McLean model of IS success. Information Systems Research, 8(3), 240–253.

Tam, C., & Oliveira, T. (2016). Understanding the impact of m-banking on individual performance: DeLone & McLean and TTF perspective. Computers in Human Behavior, 61, 233–244.

Thong, J.Y.L., Hong, W., & Tam, K.Y. (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuity. International Journal of Human-Computer Studies, 64(9), 799–810.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425–478.

Venkatesh, V., Thong, J.Y.L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36(1), 157–178.

Wang, Y.-S., & Liao, Y.-W. (2008). Assessing eGovernment systems success: A validation of the DeLone and McLean model of information systems success. Government Information Quarterly, 25(4), 717–733.

Zhu, K., Kraemer, K. L., & Xu, S. (2006). The process of innovation assimilation by firms in different countries: A technology diffusion perspective on e-business. Management Science, 52(10), 1557–1576.